Informal Comments of NRG Energy, Inc. on March 25, 2015
Joint Reliability Plan Track Two Unified Long Term Reliability Planning Assessment Tool Concept Paper
and April 9 Workshop

Submitted in R.14-02-001
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April 23, 2015

Summary of comments:

1. *NRG sees these fundamentals as inevitable: (a) energy revenues will continue to decrease as the number of renewable resources that do not depend on CAISO markets to recover their costs increases, and (2) fixed O&M costs will increase. As a result, NRG expects that only contracted resources will be able to remain economically viable.*

2. *NRG supports conducting forward analyses along the lines of what Energy Division proposes, namely, combining (a) a projection of the forward reliability needs with (b) information about forward contract status with (c) a projection of the fixed costs of resources using "proxy" resources by technology type and vintage (e.g., combustion turbine, steam turbine, combined cycle, etc.) with (d) a stochastic projection of energy revenues to assess whether resources that are needed to meet forward reliability requirements but are not forward contracted could remain economically viable. As noted above – NRG expects that the results of this analysis will confirm that resources are not economically viable without contracts.*

3. *It is not year clear how the results of these analyses will be shared or for what purposes they will be used. As NRG understands the intended output of the analysis – an aggregate MW number of units at risk of inefficient retirement, not identification of specific resources deemed at risk of inefficient retirement – it is not yet apparent how this intended output will be used to inform Resource Adequacy ("RA") contracting or to inform future modifications to the RA program (e.g., reconsidering multi-year forward RA requirements). The studies described in the concept paper will require a lot of data, effort and time, and the nature and distribution of the outputs of the studies should be clearly understood before embarking on these kinds of studies. Just as important, while the focus of the concept paper and the workshop discussion understandably was on how the analysis would be conducted, not on how it would be used – it is essential to begin to understand how this analysis will be used within the overall California reliability framework.*

4. *While all of the inputs to these studies are important, getting the forward reliability capacity (local, system and flexible) requirements right will be key to the studies producing meaningful results. As staff notes in the concept paper (at 7), staff does not expect the regions that will be modeled in SERVM will correspond to the CAISO's Local Capacity Areas, which will make it difficult to identify which retirements will be "inefficient", because the studies will not be able to identify which resources are needed to meet local reliability requirements. Additionally, while the CPUC proposes to model load levels and shapes as stochastic variables, it will not be possible to change the local capacity requirements to follow changes in load level, making it more difficult to identify what resources are needed to meet reliability requirements in each case. Finally, another key input, not mentioned in the workshop or discussed in the concept paper,*

which will be important to assessing whether system reliability requirements will be met, is the level of imports. This is a key variable over which there has been much disagreement in prior studies. In sum, while NRG sees value to the studies in concept, it also sees significant challenges to conducting these studies as described.

Responses to questions raised in the concept paper (NRG responses are in *italics*)

I. **Overall Framework**: Does the proposed two-part approach sufficiently address issues raised in the JRP scoping memo and, in general, will it provide for an improved reliability planning framework? Will the proposed modeling approach give parties a better understanding of the potential for inefficient resource retirements within the next ten years?

Yes, assuming that some of the challenges mentioned above are addressed.

II. Needs and Supply Database Questions

- a. General Database Questions
  - i. **Timing**: When should Staff release the annual update of the forward needs and supply database?

    The annual update should be released prior to the time when the load-serving entities will begin their next round of forward RA contracting.

  - ii. **Confidentiality**: Which information in the proposed database should be made public and which should remain confidential? How should the CPUC report / aggregate information for local area resource contracting that accounts for confidentiality?

    To release aggregated information within a location, there must be at least three non-affiliated suppliers in that location. Commercial information, such as status of contracting, must remain confidential. Other market sensitive information, such as use limits associated with a unit, must also remain confidential.

- b. Load Forecast Database
  - i. **Disaggregation**: Obtaining future needs based on CEC IEPR forecast is complicated by the need to disaggregate CEC and CAISO forecasts to reflect CPUC jurisdictional LSEs. If the CEC IEPR forecast is used to assess future needs, how should this disaggregation be performed?

    Stochastic analysis should obviate the need to develop single precise CPUC-jurisdictional LSE-specific precise non-coincident peak demand forecasts.

- c. Available Supply Database

- i. **LTPP Deficit**: The difference between LTPP authorizations and CPUC-approved additions reflects an expected future deficit in the available supply database. How can this deficit be incorporated into the available supply database in a manner that is consistent with LTPP procurement targets, while not biasing what resources could fill the deficit? With what spatial / temporal granularity?

  The database should reflect CPUC-authorized procurement, not LTPP authorizations.

- ii. **Data availability**: In addition to information captured within the LTPP process, is any formal data request needed to more accurately capture from CPUC jurisdictional LSEs information related to available supply or retirements occurring by year within the next ten years?

  Inasmuch as the LSEs will be providing the information, NRG takes no position on this issue.

- d. Contracted Resources Database

  - i. **Template**: Does the template developed by Staff (sent as a separate attachment) sufficiently capture LSE contracting data for the purposes of this analysis? Is any data missing, or could any data be collected more efficiently?

    Inasmuch as the LSEs will be submitting this information, NRG takes no position on the template.

  - ii. **Timing**: When is the ideal time each year to have CPUC staff collect the contracting data from CPUC-LSEs? Should this request and reporting occur annually? For the purpose of the upcoming study, is it acceptable to parties to include an additional off-schedule data request?

    Inasmuch as the LSEs will be providing the information, NRG takes no position on this issue.

- 3. Economic Risk Of Retirement Modeling Questions

  - a. **Stochastic Inputs**: Are the stochastic inputs sufficient to capture expected uncertainties and variability?

    The CPUC's proposed stochastic inputs are load shape and load level. Other stochastic inputs could include gas price, imports, hydro production, and renewables production. NRG reiterates that not having the ability to map local capacity requirements to SERVM regions or to dynamically vary the local capacity requirements as stochastic load levels vary will introduce uncertainty into the results.

    b. **Fixed O&M Costs**: What should be the basis for calculating fixed O&M costs?

Energy Division has proposed to use Going Forward Fixed Costs, which would include Fixed O&M, insurance, and Ad Valorem Taxes. In addition, a unit's fixed costs must include the costs of periodic major maintenance, capital additions or other costs that are necessary to keep the unit in operation. Given that the analysis does not propose to disclose specific units at risk of inefficient retirement, or form the basis for compensation for resources that are at risk of retirement, this approach is reasonable. Ultimately, a resource needs to be able to recover its capital costs as well.

- c. **Local Capacity Technical Studies**: CAISO Local Capacity Technical Studies examine the importance of generators for local reliability. How can results of the CAISO Local Capacity Technical studies be used to understand inefficient retirements?

  They are critical to identify local needs, just as the CAISO's flexible requirements analyses will be critical to identifying flexible capacity needs. The CAISO's local capacity requirements are not the entire universe of needs that must be evaluated, but they are an important subset of those needs.

- d. **Inefficient Retirements**: "Whether a resource is determined to be at risk of inefficiently retiring is dependent upon a factor test, which encompasses both the valuable attributes of the resource and its financial situation." How can a factor test be developed to inform determination of inefficient retirement? What additional factors should be considered?

  Presumably, the factor test to assess inefficient retirement will include these factors: (1) is the resource needed to meet reliability requirements (local, flexible and system), and (2) if the resource does not have a contract (short-term RA or long-term LTPP), does it earn sufficient revenues from the CAISO's energy and ancillary services markets to cover its fixed costs?

- e. **Sensitivity Studies and Benchmarking**: What sensitivity and benchmarking studies, in addition to what are described in this paper, should be performed?

  The out-year results (i.e., years 7-9, if conducted) should be benchmarked with the results of the latest LTPP studies. While the LTPP studies do not assess economic viability, they should indicate whether the SERVM model provides operational results consistent with the LTPP models.

  The margins from sales of energy and ancillary services should be benchmarked against the CAISO's annual analysis of such margins in its Market Performance report.

In addition to the responses to specific questions provided above, NRG provides these additional comments:

- *The forward "cliff" on RA contracting practices will affect out-year analyses. As discussed at the April 9 workshop, apart from contracts in place with new-build resources, LSE RA contracting typically does not extend beyond 3-5 years forward. What assumptions will be*

made about contracting with existing resources that are not under LTPP-style long-term contracts beyond the current horizon of 5 years? Whatever assumptions are made will greatly impact the results for assessments conducted beyond the RA contract horizon.

- *Deterministic vs. stochastic economic viability analysis. There was some discussion at the April 9 workshop about whether it would be best to conduct stochastic or deterministic viability economic analyses. NRG offers these thoughts on whether to perform stochastic or deterministic analyses.*

  Neither deterministic nor stochastic analysis amounts to a "silver bullet". Both have their tradeoffs.

  - *Deterministic analysis yields a single set of assumption-driven results, which begs the inevitable question: are those the right assumptions?*

  - *Stochastic analysis yields a range of results – which creates secondary considerations:*

    1. *What criteria do you use to determine what part of the range of results is the right part of the range to use?*

    2. *There will be a tendency to want to discard the "tails" from stochastic analyses as representing low probability outcomes, but these "tails" identify the stressed conditions and may be very informative.*

  Given the limitations and dependency of deterministic analyses on assumptions, a stochastic analysis that uses the limited set of draws (165) proposed, coupled with consensus around how to present and use the range of outputs developed prior to the analysis being conducted, may provide the most robust and useful set of results. However, the importance of local area capacity requirements in determining what resources are needed, and the current limitations in representing these limitations in SERVM, pose a significant challenge to the reliability of stochastic analyses. These challenges are significant, but NRG does not expect that these challenges will threaten the inevitable finding of the study – that resources without contracts will not be economically viable.

  Finally, this proceeding should build on the current work going on in the LTPP proceeding to "standardize" stochastic analysis.